UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

February 8, 2017

Mr. Anthony R. Brown
Environmental Manager
Atlantic Richfield Company
4 Centerpointe Drive, LPR 4-435
La Palma, CA 90623-1066

Subject: EPA comments on Atlantic Richfield's March 14, 2016 Surface Water Technical Data Summary Report and Response to U.S. EPA and LRWQCB Comments on the Report titled Evaluation of Historical and RI/FS Surface Water Data, Leviathan Mine Site, Alpine County, California

Dear Mr. Brown,

U. S. Environmental Protection Agency (EPA) has reviewed the March 14, 2016, Surface Water Technical Data Summary Report and Response to U.S. EPA and LRWQCB Comments on the Report titled Evaluation of Historical and RI/FS Surface Water Data, Leviathan Mine Site, Alpine County, California (Summary Report) prepared on behalf of the Atlantic Richfield Company (ARC) by AMEC.

The Summary Report was provided in partial fulfillment of the requirements of the Statement of Work attached to the Administrative Order for Remedial Investigation and Feasibility Study (Unilateral Administrative Order), Comprehensive Environmental Response, Compensation, and Liability Act Docket No. 2008-18 issued by the EPA on June 23, 2008.

Background: The Evaluation of Historical and Remedial Investigation/Feasibility Study Surface Water Data was prepared by ARC in response to EPA's May 15, 2013 letter Partial Approval and Comment, Off Property Focused Remedial Investigation Work Plan, Addendum No. 2.

ARC delivered a draft of the evaluation on October 31, 2014. After preliminary review of the October 2014 submittal, during a face to face technical meeting on January 21, 2015, EPA requested that ARC more fully develop mass estimates throughout the Leviathan-Bryant Creek watershed, more fully consider the available historical chemical data, and provide a data usability analysis.

On April 1, 2015 During an EPA/ARC technical meeting, ARC agreed to provide a data quality assessment or quality control summary report as an appendix to the Surface Water Evaluation. This began a lengthy discussion and it became evident that there was a need for providing and updating the Quality Assurance Project Plan; which took several iterations and a final approval of a QAPP dated June 17, 2016. In parallel to the need to fully overhaul the QAPP, EPA revisited the need to review data, database, and data presentations.

On January 19, 2016 ARC and EPA met and discussed the need for technical data deliverables by media and the expectation that they are to become incorporated into the RI/FS report as appendices and provide

the basis for RI/FS content. EPA was clear that the webinar presentation provided by ARC on August 8, 2015, and the subsequent deliverable were incomplete and did not address earlier EPA comments (i.e. such as those provided on the Mine Waste report dated April 3, 2015)

EPA requested ARC proceed with technical data summary reports for each media (i.e. Mine Waste and Groundwater, as well as Surface Water); providing clear direction and extensive comments on the need for full Quality Control Summary reports (QCSRs), Data Quality Assessments (DQA) and overall assessment of data usability necessary for the ecological and human health risk assessments.

ARC suggested that their most responsive and robust data summary and evaluation to date; was the technical data summary report (TDSR) that ARC prepared and presented for Mine Waste dated **April 23, 2016**. ARC suggested that the format would be a template for all other media.

EPA assumed the April 23, 2016 document would be responsive to earlier EPA comments and serve as a template for the RI/FS. However, EPA's review found the Mine Waste TDSR document incomplete and resulted in an 18 page comment letter dated December 29, 2016.

EPA again requested that ARC fully incorporate EPA comments and develop a full, complete and final robust Mine Waste Characterization chapter for the first draft RI/FS report, including the baseline risk assessment, by December 31, 2017.

EPA further requested that all remaining TDSRs (i.e. surface water, groundwater, stream sediment/floodplain soil, and reference) to be responsive and incorporate all of the EPA's comments from the mine waste TDSR as applicable. EPA further directed ARC to ensure that delivery of all of these TDSRs are timed sufficiently to allow for submittal of an inclusive *draft* RI/FS by December 31, 2017.

EPA has completed review of the ARC submittal of the March 14, 2016 Surface Water Technical Data Summary Report.

EPA provides the following general comments. Please note that these are the same G1 thru G5 comments dated December 29, 2916 that EPA provided on the Mine Waste Technical Data Summary Report. These are issues that have repeatedly remained unaddressed, incomplete or unresponsive in prior planning and/or reporting of data documents. Not only do they apply to the Mine Waste Report, they apply to all of the data submittals, particularly those that ARC has termed "Technical Data Summary Reports". Please ensure that each of the comments is applied to all data for all media / data sampled for the RI/FS:

- **Previous EPA comment December 29, 2016 G1: Summary of previous investigations and abatement measures:** The summaries are general in nature and do not provide sufficient evaluation of available analytical data. Please ensure that associated analytical data are summarized in tables and described in text sufficiently to support comparison with information gathered during ARC's RI field efforts. It is important that ARC provide context for the RI data, evaluate site conditions through time, and provide support for decision making. Clearly documenting how that data was compared, its findings, and how it has informed the evaluations of each of the media being evaluate. This is true for all media. In this case, surface water has more than 10 years of historical data prior to the implementation of the RI/FS field work.

- **Previous EPA comment December 29, 2016 G2: Secondary Sources and Pathways:** Please provide additional detail and discussion on the relationships of the secondary sources and pathways to the media being evaluated. Although the surface water report discusses this in Section 4.1.2 discusses pathways and secondary sources, ARC should ensure that all of the TDRS have text clearly provide a robust discussion to explain how the secondary sources and pathways relate to each of the media.

- **Previous EPA comment December 29, 2016 G3: Data Quality Assessment (DQA) Incomplete:** Please revise to ensure proper organization and documentation of the actual steps of the DQA as per the approved 2016 RI/FS QAPP. The QAPP, Section 6.1, clearly references EPA's Data Quality Assessment: A Reviewer's Guide EPA QA/G-9R, dated February 2006. It defines the 5 steps for performing a DQA:
  1. review project objectives and sampling design
  2. conduct preliminary data review
  3. select statistical method
  4. verify assumptions of the method
  5. draw conclusions from the data.

  The data quality review is not complete. In particular, the TDSR does not show how the DQA and DQO processes correlate. ARC must ensure compliance with EPA guidance, and provide a clear DQO process that includes a sampling design that collects the right type, quality, and quantity of data for the intended use. Please provide revised DQA text statements to clearly support the adequacy and sufficiency of the data set to support the risk assessments and RI/FS decision making. Please ensure that the DQA process evaluates whether the objectives in the DQO planning phase have been achieved and are supported by data of adequate quality.

- **Previous EPA comment December 29, 2016 G4: Non-Conservative Screening** In many instances ARC used the maximum proxy reference metal concentration to screen the data set. i.e. in the Mine Waste Report. This results in a non-conservative comparison because there is no way to determine if an outlier is responsible for the selected screening value. For all media, it is essential that ARC shall, estimate the median and mean prox y reference concentration for each metal and provide comparison to median and mean site concentrations. This is particularly important for reference data for all the media. These will likel y be more similar to the calculated exposure point concentrations (EPC's), to represent an upper confidence limit on the mean concentration

- **Previous EPA comment December 29, 2016 G5: Lack of Documentation to Support Statistical Analyses:** ARC must ensure that statistical analysis is clearly documented and presented for all media. ARC's attempts to confirm statistical analyses through reference to appendices is not sufficient. In some cases, the appendix is overly general and does not clearly show how or whether the information supports the text (i.e. the geostatistical cross validation) The statistical power analysis is not included in an appendix and the findings are not reproducible using the methods described in the text. Please ensure that all media have clearly presented and supported proper statistical analysis to support the report conclusions. Any reader of the document should have sufficient information to achieve comparable results.

EPA provides the following Additional General and Specific comments:

General Comments

- **G6: History and Review of ARC Responses to EPA's December 14, 2015 comments on the Evaluation of Historical and RI/FS Surface Water Data.** ARC Responses to EPA General comments G1 thru G3 and Specific comments S1 thru S27 are often adequate; however, a number remain incomplete or not responsive. Please see Attachment 1.

- **G7: History and Review of ARC Responses to the Lahontan Regional Water Quality Control Board (LRWQCB):** ARC response to LRWQCB comments 1 thru 37 are mostly adequate; however, a number remain incomplete or not responsive. Please see Attachment 2.

- **G8: Consistency in format and presentation of technical data per approved RI/FS QAPP.** The Surface Water TDSR was prepared prior to the conditionally approved RI/FS QAPP dated June 17, 2016 and revised on January 27, 2016. And prior to additional comments such as those provided December 29, 2016 on the Mine Waste TDSR. Further, this version of the Surface Water TDSR only evaluates analytical data through 2013. Analytical data are now available through 2015. And 2016 data should also be available within 6 months. ARC should provide an updated database by June 2017. All data should have QCSR and DQA prepared in accordance with the approved RI/FS QAPP and it must be provided and incorporated. An updated TDSR should be prepared that follows approved RI/FS QAPP for Leviathan Mine, is inclusive of all of the available analytical data, and that should become part of the Draft RI to be completed by December 31, 2017. The format of that submittals should incorporate all of EPA comments on this and other TDSRs, and it should contain at a minimum a functional database, legible tabular data summaries, QCSR, and completed DQA.

- **G9: Consistency and response to EPA comments on all TDSRs:** As discussed in recent meetings with ARC, EPA expects that comments made on each matrix specific TDSR will be incorporated as appropriate into later TDSRs. As noted above, comments G1 thru G5 are applicable in all instances. EPA expects that ARC will timely discuss comment appropriateness with EPA should ARC suspect that a comment may not be relevant to another TDSR.

Specific Comments:

- **S1: Section 5.3.1 Graphical and Statistical Methods, Section 6.3 Chemical Mass Flux, Section 7.5 Chemical Mass Fluxes in Leviathan and Bryant Creeks.** These sections reference data and figures in Appendix 7-D which address mass loading not mass flux. Mass flux refers to the mass per area per unit time. Mass loading refers to mass per unit time. Please ensure consistency and revise text appropriately.

- **S2: Section 4.1.2.4 Surface Water, Page 18 last paragraph.** Please revise the reference to additional mass loading potentially being from a "natural source not related to Leviathan Mine" to being from an "unknown source."

- **S3: Page E-7, 6th bullet.** Please define the upstream extent of the groundwater evaluation. This bullet explains that additional groundwater-surface water interactions will be explored in Amendment 11; however, Amendment 11 does not identify activities near the uncaptured portion

of the Delta Seep. Please provide additional detail on the study of the Delta Seep area. The 2017 field sampling program should include this work as part of an expansion to the TSAP Amendment 11, or in a new Field Sampling Plan.

- **S3: Page 15, Section 4.1.2.2, second paragraph.** Please include text to clarify that while groundwater generally follows the topography, mine-related and post mining abatement-related features (e.g. waste piles, tunnels, drains, and ponds) may affect groundwater flow.

- **S4: Page 17 Section 4.1.2.4, first paragraph, third sentence.** Please note in the text that a portion of the Delta Seep is not captured and discharges continuously to Leviathan Creek.

- **S5: Page 17 Section 4.1.2.4, second paragraph, first sentence.** Please note in the text that recent beaver dams have caused pools to form that provide a surface water connection with the acid pond.

- **S6: Page 17, Section 4.1.2.4, fifth paragraph, first sentence**. Please state that the current acid drainage management includes seasonal interception and treatment of a portion of the Delta Seep.

- **S7: Page 37, Section 6.0, fourth bulleted paragraph last sentence.** Please revise the years from 2014 to 2015.

- **S8: Page 38, Section 6.0, third bulleted paragraph**. Please state that CUD capture and treatment was suspended for 9 days in late August 2006 due to a shutdown of ARC's Pilot HDS Plant.

- **S9: Page 42, Section 6.1.1, third paragraph.** The reference to Figure 3-10 should be to Figure 6-10.

- **S10: Page 43, Section 6.1.2, last paragraph.** Please include text to clarify that the water quality in 2006 was also negatively affected by the discharge associated with the loss of CUD capture and treatment in late August 2006.

- **S11: Page 47, Section 7.1**. Please include a statement that references that CUD and Delta Seep discharge to Leviathan Creek during the fourth event.

- **S12: Page 51, Section 7.3, first paragraph, second to last sentence.** Please address the discrepancy between if the total metal measurements will be used to evaluate potential human and ecological impacts or if the total metal measurements are potentially applicable as stated in the response to comments for Comment 17 from the RWQCB (8/4/2015).

- **S13: Page 53, Section 7.3.2.** Please add a barrower evaluation group to assess mass loading as a result of the uncaptured portion of the Delta Seep. This group should include measurements from location SW9 (upstream of Delta Seep) and SW10 (downstream of Delta Seep).

- **S14: Page 69, Section 9.1.** Please include Table 9-1 in this report. It is mentioned in the text but it is not provided.

- **S15: Page 71, Section 9.2.** Please include text to identify the uncaptured portion of the Delta Seep as a data gap in the bulleted paragraph starting "As described above…"

- **S16: Appendix 7-C.** Please provide graphs of total metal concentration in comparison to the MCL since the MCL threshold is inclusive of the dissolved and solid portions of the metal.

- **S17: Tables 7-2A and 7-2B, Footnote 1.** Please ensure the Footnote References Appendix 5-C.

- **S18: Table 10-1.** Please correct the table to display the lower range for the preliminary reference values of all metals; and footnote 1 should reference surface water not groundwater.

Attached also, please find a copy of the May 10, 2016 comments from the Lahontan Regional Water Quality Control Board for your full consideration and response.

Similar to the Technical data summary report on the Mine Waste media; on or before December 31, 2017, As part of a draft RI/FS submittal, please fully incorporate these EPA comments and prepare and submit a full complete and final robust Surface Water Characterization chapter in the RI/FS report, and complete the baseline risk assessment for surface water.

As discussed, please also develop the remaining media specific reports (TDSRs) (i.e. Stream Sediment/Floodplain Soil, and Reference) to be responsive and incorporate all of these same EPA comments by June 30, 2017. Within 30 days, ARC should provide a response that it concurs with these comments and will incorporate them as requested. Should ARC find that they disagree, do not concur, or will not incorporate EPA comments, then this should be discussed with EPA immediately to ensure that these submittals in June are satisfactory. Please ensure these two TDSRs are full complete, responsive and sufficient to act as a template for all other media reports/ chapters for inclusion in a *draft* RI/FS by December 31, 2017.

In addition, on or before June 2017, please provide data submittals for 2016 groundwater and surface water data.

If you have any questions, please feel free to contact me at (415) 947-4183 or Deschambault.lynda@epa.gov.

Sincerely,

Lynda Deschambault

Lynda Deschambault
Remedial Project Manager

Cc by electronic Email:

Michelle Hochrein, Washoe Tribe of Nevada and California
Douglas Carey, California Regional Water Quality Control Board, Lahontan Region
David Friedman, Nevada Department of Environmental Protection
Kenneth Maas, United States Forest Service
Tom Maurer, United States Fish and Wildlife Service
Toby McBride, United States Fish and Wildlife Service
Steve Hampton, California Department of Fish and Wildlife
Marc Lombardi, AMEC

ATTACHMENT 1: History and review of ARC Responses to EPA's previous December 14, 2015 comments on the Evaluation of Historical and RI/FS Surface Water Data

- **EPA previous March 15, 2013 and December 14, 2015 G1: Incomplete.** EPA's comments from the March 15, 2013, letter and subsequent meetings had not been adequately addressed and ARC had remained unresponsive regarding some key deliverables (e.g. data quality assessment and data usability evaluation). **ARC Response:** ARC's response states that a final full presentation and evaluation of surface water will be included in the Draft Remedial Investigation (RI) Report. It also states that since June 30, 2015, ARC and EPA have discussed content of interim RI data submittals. This submittal has been reformatted. **EPA Comment:** EPA anticipates that the key deliverables (e.g. data quality assessment and data usability evaluation) to be presented in the next version of the surface water TDSR. The new format of the document renders it time consuming and difficult to verify responses to comments. Responses to EPA comments on future documents should include reference to the new section number, etc. of any changes to the document associated with a response to the comment.

- **EPA previous March 15, 2013 and December 14, 2015 RTC G2: Data Quality Assessment.** EPA requested again that ARC provide a data quality assessment or quality control summary report for the Surface Water Evaluation. In support EPA requested that ARC provide a documented process for applying data validation results to evaluating and qualifying overall datasets. EPA also requests "Risk Assessment Data Usability Evaluation Reports" for each media specific report and mine waste report in the future. **ARC Response:** ARC's response states that the initial directive for this work was unclear and that EPA has only recently provided an example QCSR. ARC states that they will modify Appendix 5B to include a data quality summary worksheet. The data QCSR will be provided under a separate cover with the revised 2013 RI Data Summary Report (March 19, 2016). **EPA Comment:** EPA policies are clear, the QAPP is clear, and EPA has provided numerous comments on the 2013 QCSR under separate cover.

- **EPA previous December 14, 2015 G3: Relationship with Groundwater.** EPA requested that ARC discuss the potential interaction of groundwater and surface water at Leviathan Creek. For example, ARC should discuss and provide evidence that either supports or refutes the hypothesis that the groundwater from Leviathan Mine discharges to Leviathan Creek. **ARC Response:** ARC's response acknowledged this comment and stated that the surface water/ groundwater interaction would be discussed in the Groundwater Technical Memo. **EPA Comment:** ARC's response is adequate. EPA will provide comments on the groundwater TDSR under separate cover.

- **EPA previous December 14, 2015 S1: Section 2.5 Data Usability Evaluation.** EPA requested that ARC provide summary documentation and additional discussion for rejected data (e.g. samples related to those samples with corrective actions within the overall data set were similarly qualified). EPA also requested clarification on if the data remained included in the data set with appropriate qualifiers. **ARC Response:** ARC provided a Data Quality Worksheet within Appendix 5-B that provides documentation of data that were validated; however, the overall data set has not been examined. **EPA Comment:** EPA notes that the Data Quality Summary Worksheet is an interim evaluation; however, a full QCSR is required for full data validation. ARC's response is satisfactory under the assumption the QCSR will address full data set validation based on the 20% selected for laboratory validation.

- **EPA previous December 14, 2015 S2: Overall Assessment of Figures and Appendix Figures.** EPA requested that ARC include the comparison of analytes to flow in Leviathan, Aspen, and Bryant creeks and that ARC assess the data using other models besides linear regression models. **ARC Response:** ARC stated that a preliminary multivariate time series regression modeling was conducted to assess "local" parameters at the time of metals sampling. ARC stated that these results indicate that a linear model is most appropriate. In addition, ARC explained that the significance at the time of sampling does not provide any consensus in explaining metal concentration variation over time. Section 8.2.3 has been revised to include discussion. **EPA Comment:** EPA concurs that the use of linear regression is suitable. In Section 8.2.3, the term "local environmental conditions" is not defined. Please define and clarify (i.e. is this inclusive of flow?). Please also add a discussion summarizing the power analysis used to support the assertion that conditions at the time of sampling explain the variations in concentration over time. ARC stated that flow among other parameters exhibits a significant relationship with manganese concentration. Please provide a figure illustrating the relationship between flow and manganese. Please also include a figure illustrating the relationship between flow and sulfate.

- **EPA previous December 14, 2015 S3: Section 5.2.2 Aspen, Leviathan, and Bryant Creeks.** EPA requested that ARC examine metal concentration as a function of flow in addition to dry vs. wet years. EPA also requested that 1999 be included as a high flow year. ARC stated that there was no indication that metal concentration increased during high flows. EPA requested explanation regarding what condition (e.g. baseline flow, low flow, etc.) the metals concentrations were being comparatively measured against. For example, the text stated that data "show no indication that metals concentrations increase during periods of high flows." **ARC Response:** ARC's response acknowledged that 1999 should be included in high flow year analyses and the section was revised to reflect that change. In addition, the discussion of comparative metals concentrations was deleted and a more robust assessment of the differences in metals concentrations is presented. **EPA Comment:** This response is adequate.

- **EPA previous December 14, 2015 S4: Main Text Figures 3-19 through 3-28.** EPA requested that figures assessing data of the same metal have a standard y-axis range to enable comparisons between locations. **ARC Response:** ARC addressed this concern and made some of the requested adjustments. **EPA Comment:** These figures are now Figures 6-19 to 6-28. However, the y-axis range for figures 6-21, 6-25, 6-26 and 6-28 have not been adjusted. Please adjust. In addition, the stations in the paired graphs in each figure are repetitive. EPA recognizes that these graphs contain Leviathan Creek/ Bryant Creek and Aspen Creek/Bryant Creek. EPA directs ARC to ensure that all graphs comparing the same metal use the same scales, and to clearly label the creek in which the stations are located.

- **EPA previous December 14, 2015 S5: Main Text Figures 5-9 & 5-10.** EPA requested that ARC color code "wet" and "dry" years to assist in distinguishing groups. **ARC Response:** ARC clearly differentiated wet and dry years on the revised figures. **EPA Comment:** ARC's response is adequate. Please confirm that Figures 5-9 and 5-10 are now Figures 8-9 and 8-10, respectively.

- **EPA previous December 14, 2015 S6: Appendix 2-A Table 2 Data Qualifier Definitions.** EPA requested the qualifier flag "E" be defined within Table 2. **ARC Response:** ARC references Appendix 5-B Table 2 as containing qualifier definitions. This table presents

analytical parameters and reporting limits. **EPA Comment:** Please provide definitions and reference the correct table. It appears that Appendix 5-A Table 2 is the appropriate table.

- **EPA previous December 14, 2015 S7: Appendix 2-A Table 2 Data Qualifier Definitions.** EPA requested clarification concerning the data qualifier flags "F" and "N." Both "F" and "N" have the same definition. Is this an intermixing of laboratory and validation qualifiers? **ARC Response:** ARC's response explains that the "F" and "N" qualifiers are both laboratory qualifiers that are from Test America and ALS Environmental labs, respectively. ARC states that laboratory qualifiers will eventually be reconciled through data validation such that only the validation qualifier will remain. ARC will provide an update to the data quality discussion upon the completion of the QCSR prepared according to the revised RIS/FS QAPP. **EPA Comment:** The response is adequate.

- **EPA previous December 14, 2015 S8: Appendix 2-C Report, Data Quality Evaluation 2012 and 2013 Surface Water Investigation RI/FS. Overall Assessment of QA/QC.** EPA requested that ARC prepare a QCSR to ensure the database has accurately qualified data. The QCSR was not included. **ARC Response:** ARC does provide a Data Quality Evaluation (DQE) in Appendix 2-C that presents a calculation of completeness criteria and tabulations of field duplicate precision, rejected data, and laboratory analytical reporting limits. ARC's response stated that since these comments ARC and EPA have worked closely to refine the requirements so that ARC provides QCSR and DQA in the preferred format. ARC stated that a data quality discussion would be provided in Section 5.2 after completion of the QCSR for 2012 according to the QAPP Revision No. 1. ARC has also added a data quality summary worksheet in Appendix 5-B that identifies which samples were used as matrix spikes and provides a preliminary discussion on accuracy results. A full evaluation of matrix spike recoveries will be completed after data validation. ARC noted that the summary of qualified results indicates that less than one percent of the data exhibited matrix spike recoveries outside the acceptance criteria. **EPA Comment:** This response is adequate. Please prepare the QCSR in accordance with revisions and comments pertaining to the QCSR located in the QAPP. Please correct deficiencies in the Appendix that include lack of summaries of matrix spike recoveries and accuracy, duplicate precision and blank contamination, corrective actions taken to address any laboratory or field collection issues, and duplicate precision per metal and confirm if any identified trends should be applied to samples that were not validated.

- **EPA previous December 14, 2015 S9: Appendix 2-C Report, Data Quality Evaluation 2012 and 2013 Surface Water Investigation RI/FS. Overall Assessment of QA/QC.** EPA noted that the database still contained a combination of validated and un-validated data with a mix of laboratory and validation qualifiers. EPA requested that review all data and ensure that they are appropriately qualified so that the end user has confidence regarding the data usability. EPA also requested that that the QCSR summarize the issues for the entire dataset with a clear discussion of the types of parameters that were qualified and why. **ARC Response:** ARC's response identified that discussion and revisions of the QAPP have been ongoing and that future technical meetings will discuss these items further. ARC will include a data quality summary worksheet to Appendix 5-B. ARC will provide an update to the data quality discussion in Section 5.2 after the completion of the surface water QCSR. **EPA Comment:** This response is adequate and EPA requests that ARC prepare the QCSR in accordance with revisions and comments pertaining to the QCSR located in the QAPP.

- **EPA previous December 14, 2015 S10: Appendix 2-C Report, Data Quality Evaluation 2012 and 2013 Surface Water Investigation RI/FS. Section 3.3 Laboratory Quality Program. Second Paragraph.** EPA requested that the text reference the correct table that contains the data qualifier definitions. **ARC Response:** ARC included a reference to the correct table. **EPA Comment:** ARC's Response is adequate.

- **EPA previous December 14, 2015 S11: Appendix 2-C Report, Data Quality Evaluation 2012 and 2013 Surface Water Investigation RI/FS. Section 4.1.4 Data Qualification. Last Paragraph.** EPA requested that the last paragraph, specifically the statement "Both laboratory data flags and data validation qualifiers were considered during this data quality assessment and the findings are summarized in Table 2C-3" be corrected to accurately reflect the contents of Table 2C-3. **ARC Response:** ARC stated it has removed this statement from the text and modified the Appendix. **EPA Comment:** The appendix is modified; however, the section numbering has changed. In all responses, please state the revised section numbers where the response and text changes can be found in this case, please provide the new title for what was formerly Section 4.1.4.

- **EPA previous December 14, 2015 S12: Appendix 2-C Report, Data Quality Evaluation 2012 and 2013 Surface Water Investigation RI/FS. Section 6.1. Accuracy.** EPA requested that ARC identify field samples that were used for MS/MSD samples and a summary of the MS and MSD accuracy criteria. EPA also requested the matrix spike accuracy on the PARCCS criteria. **ARC Response:** ARC has identified the field samples used for MS/MSD samples in Appendix 5-B. ARC has stated that a complete MS/MSD summary will be included after the completion of Level II data validation and the QCSR. **EPA Comment:** The appendix is modified; however, the section numbering has changed. In all responses, please state the revised section numbers where the response and text changes can be found in this case, please provide the new title for what was formerly Section 6.1 referenced in EPA's comment.

- **EPA previous December 14, 2015 S13: Appendix 2-C Report, Data Quality Evaluation 2012 and 2013 Surface Water Investigation RI/FS. Section 6.1.1 Laboratory QC Samples. First Sentence.** EPA requested that ARC include a discussion and tabulation of matrix spike accuracy results and indicate which MS/MSD samples and the summary of accuracy criteria for these samples in the DQE report and tables. EPA requested this assessment even though ARC summarized that the results were low or non-detect and the surface water results did not merit qualification. **ARC Response:** ARC has removed the statement described above and the QCSR will contain a summary of the matrix spike accuracy criteria. **EPA Comment:** The appendix is modified; however, the section numbering has changed. In all responses, please state the revised section numbers where the response and text changes can be found. In this case, please provide the new title for what was formerly Section 6.1.1 referenced in EPA's comment.

- **EPA previous December 14, 2015 S14: Appendix 2-C Report, Data Quality Evaluation 2012 and 2013 Surface Water Investigation RI/FS. Section 6.1.1 Laboratory QC Samples.** EPA requested that ARC provide a full explanation of the QC samples that indicated an analyte-specific bias. **ARC Response:** ARC has removed the statement described above and states that the QCSR will contain a discussion on the bias introduced from the laboratory QC samples. **EPA Comment:** The appendix is modified; however, the section numbering has changed. In all responses, please state the revised section numbers where the response and text changes can be

found. In this case, please provide the new title for what was formerly Section 6.1.1 referenced in EPA's comment.

- **EPA previous December 14, 2015 S15: Appendix 3-C Graphical Plots of Pre-RI/FS Data.** EPA requested that ARC provide figures of dissolved concentration of arsenic by year at Station 16. **ARC Response:** ARC has included a figure in Appendix 6-C (previously 3-C). **EPA Comment:** This response is adequate.

- **EPA previous December 14, 2015 S16: Appendix 4-C Metals Concentrations in Surface Water Monitoring Stations- 2012 and 2013.** EPA requested that ARC adjust the y-axes of the dissolved metals in surface water to a logarithmic axis range to allow for greater distinction to be observed between monitoring sites. EPA requested that ARC also provide discussion about the general uptrend of arsenic concentration near the confluence of Bryant and Doud Creek. Other metals that appear to exhibit a similar trend should be discussed and include barium, copper, iron, manganese, nickel, and vanadium. **ARC Response:** ARC argues that the graphs are presented in a linear form for the y axes to assist interpretation by non-technical lay people. However, ARC has added a second set of graphs that use logarithmic scale. ARC stated that a discussion of the metals concentration uptrend near the confluence of Bryant and Doud Creeks was addressed in June 30, 2015, Surface Water Report and that a work plan was developed to investigate this observation. **EPA Comment:** EPA acknowledges the discussion of the confluence of Bryant and Doud Creeks, and directs ARC to include the discussion here.

- **EPA previous December 14, 2015 S17: Appendix 4-D Mass Loading at Surface Water Monitoring Stations - 2012 and 2013.** EPA requested that ARC provide a discussion of the elevated dissolved arsenic mass loading observed near the confluence of Bryant and Doud Creeks. **ARC Response:** ARC argues that the observation of elevated dissolved arsenic was discussed in the June 30, 2015, Surface Water Report. ARC references this discussion in pages E-6, E-7, 25, 34, 37, 38, 43, and 44. **EPA Comment:** EPA recognizes that this version of the report has changed significantly since the June 30, 2015, version and as a result EPA requests that ARC include the discussion here, and reference the pages for the current version of this report.

- **EPA previous December 14, 2015 S18: Appendices 4-C & 4-D.** EPA requested that ARC review graphs and figures for consistency (e.g. symbolism, legend, etc.). **EPA Comment:** ARC's response is satisfactory. Please confirm that Appendix 4C is now Appendix 7C1 and 7C2.

- **EPA previous December 14, 2015 S19: Appendix 5A Results of Mann-Kendall Analysis.** EPA requested explanation of the axes labels of the Mann-Kendall Trend Test. EPA also requested clarification if the first graph of each metal set was representative of Station 1 data. If the first graph was of Station 1, EPA requested that ARC discuss the apparent trend of metals at this location. There also appears to be a slight upward trend in arsenic at Stations 16 and 26 that may be indicative of another unidentified source near the confluence of Bryant and Doud creeks (evidence of Station 26 trend). Overall EPA requested a summary discussion and analysis of the observed trends in the text of the report. **ARC Response:** ARC's response states that titles have been added to the figures and that the revised data summary text is now Section 8.2.2. **EPA Comment:** ARC's response in incomplete. The figures appear to be unchanged from the June 30, 2015, version of this report. There is no clarification concerning the axes labels. For example, define the timeframe represented by "Generated Index". Further, please define the units of the y-

axis. No further explanation or summary appear in the text. EPA directs ARC to address these issues.

- **EPA previous December 14, 2015 S19 (Sic): Page ES-1, Executive Summary.** Please refer to RTC LRWQCB 1 in Attachment 2

- **EPA previous December 14, 2015 S20.** Please refer to RTC LRWQCB 2 in Attachment 2

- **EPA previous December 14, 2015 S21: Page ES-3, Evaluation of Historical Surface Water Data.** Please refer to RTC LRWQCB 5 in Attachment 2

- **EPA previous December 14, 2015 S22: Page ES-7, Recommendations.** Please refer to RTC LRWQCB 10 in Attachment 2

- **EPA previous December 14, 2015 S23: Page 3, Section 2.0, last paragraph, 1st sentence.** Please refer to RTC LRWQCB 12 in Attachment 2

- **EPA previous December 14, 2015 S24: Page 5, Section 2.2, 2nd paragraph, last sentence.** Please refer to RTC LRWQCB 17 in Attachment 2

- **EPA previous December 14, 2015 S25: Page 25, Section 4.3, 5th sentence.** Please refer to RTC LRWQCB 27 in Attachment 2

- **EPA previous December 14, 2015 S26: Page 40-41, Section 5.2.3.** Please refer to RTC LRWQCB 33 in Attachment 2.

ATTACHMENT 2: History and review of ARC Responses to previous August 14, 2015 Regional Board Comments on the Evaluation of Historical and Remedial Investigation/Feasibility Study Surface Water Data, Leviathan Mine Superfund Site, Alpine County, California:

- **Previous August 14, 2015 Comment LRWQCB 1: Page ES-1, Executive Summary, 1st sentence and other locations in the document.** RWQCB requested clarification on the years with historical data available for use in this evaluation. The executive summary states 1994-2010 while in other sections of the report historical data also included 1982 and 1983. **ARC Response March 14, 2016:** ARC's response stated that 1982 and 1983 were included in historical data and that the text had been revised. **EPA Comment:** This response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 2: SRK Consulting Study.** RWQCB requested clarification concerning why surface water data collected under a 1988 and 1989 study was omitted from discussion in this current evaluation. **ARC Response March 14, 2016:** ARC's has included a summary of the previous investigation in Section 3.0 of this report. **EPA Comment:** This response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 3: Page ES-2, Surface Water, AD Discharge Locations and Treatment Systems, 1st paragraph, last sentence.** RWCQB requested that ARC additionally mention the presence of seeps on site that are present, but not currently monitored. **ARC Response March 14, 2016:** ARC's response explains that ARC believes most surface seeps that flow continuously and reach surface water with the exception of a portion of Delta Seep are monitored. **EPA Comment:** EPA acknowledges ARC's response, but agrees with the LRWQCB and requests that ARC expand the text to mention non-monitored seeps for a full and complete representation of the site hydrology.

- **Previous August 14, 2015 Comment LRWQCB 4: Page ES-3, bulleted paragraph starting with "RI/FS Data," last sentence.** LRWQCB requested that ARC list the sampling events in bulleted sentences and label the four events numerically (i.e. Event 1 [early spring before capture], Event 2 [later spring during DS/CUD capture], Event 3 [summer during CUD/DS and PWTS operation], and Event 4 [fall after operations]). **ARC Response March 14, 2016:** ARC's response explains that the sampling event numbers were added parenthetically to the text. **EPA Comment:** This change is not observed on page ES-3; however, the season and the ERA operation activity were added parenthetically. This response is adequate despite the omission of sampling event number.

- **Previous August 14, 2015 Comment LRWQCB 5: Page ES-3, Evaluation of Historical Surface Water Data.** LRWQCB requested that ARC revise the time periods for analysis of Leviathan and Bryant creek data to improve the linkage between response actions and water quality data. The suggested time periods are as follows: 1994-1998, 1999, 2000-2001, 2002-2004, 2004-2006, and 2007-2013. **ARC Response March 14, 2016:** ARC's response explains that the time periods presented in the evaluation are a result of discussion with LRWQCB on December 11, 2014, and written correspondence from LRWQCB representatives on December 12, 2014. The December 12, 2014, time periods were incorporated into the June 30, 2015, evaluation. ARC acknowledged that the past response actions have had an effect on water quality and downstream receptors; however, ARC states that the current time periods adequately supports the objectives of the summary. ARC argues that the time periods provide the proper context for evaluating whether data are adequate to complete the RI/FS and risk assessments.

Additionally, ARC argues that the time to modify all of this evaluation's figures and tables is significant and the time periods in this evaluation were not revised. ARC states that it is open to further discussion in future data evaluations and the Draft Remedial Investigation Report. **EPA Comment March 14, 2016:** The response is adequate at this time. However, ARC shall consider a more detailed analysis of the relationships between response actions and water quality such as requested by the Regional Board in future revisions of the surface water report and in the draft and final RI/FS.

- **Previous August 14, 2015 Comment LRWQCB 6: Page ES-4, Comparison of Historical Data to RI/FS Data, 5th sentence.** LRWQCB requested clarification concerning if the data collected when no capture of the CUD and DS is inclusive of monitoring locations that are not impacted by capture and treatment of the CUD and DS. **ARC Response March 14, 2016:** ARC's response explains that the collected data are inclusive of monitoring locations not affected by the DS and CUD capture. **EPA Comment:** The text has been revised and this response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 7: Water Board Staff Recommendation, table.** LRWQCB recommended adding a table that identifies the monitoring stations at which historical data and RI/FS data were compared, water quality parameters were compared, and temporal period was compared. **ARC Response March 14, 2016:** ARC's response does not include a table; however, the text in the Executive Summary provides clarification as to which constituents were compared at which stations and over what time periods. The text does not seem to include a summary of which water quality parameters were compared. **EPA Comment:** Please include a summary of which water quality parameters were compared.

- **Previous August 14, 2015 Comment LRWQCB 8: Page ES-5 Conclusions, 2nd bulleted paragraph, 1st sentence.** LRWQCB recommended revising the sentence to be consistent with the aforementioned time periods (LRWQCB 5). **ARC Response March 14, 2016:** ARC's response refers to its response to comment 5 which explains ARC's reasoning for not revising the time periods. **EPA Comment:** The response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 9: Page ES-5 Conclusions, Bullet 5.** LRWQCB recommended identifying and referencing a nearby monitoring location rather than referring to a downstream distance. **ARC Response March 14, 2016:** The text was revised to reference Station 25. **EPA Comment:** ARC's response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 10: Page ES-7 Recommendations.** LRWQCB recommended noting that additional data collection would likely be necessary to characterize surface water conditions for known seeps that are not presently captured. LRWQCB also recommends noting that a portion of Delta Seep is not presently captured. **ARC Response March 14, 2016:** ARC's response notes that other studies under the RI/FS will be conducted that address the groundwater/surface water interaction including the area near Delta Seep (Amendment 11). **EPA Comment:** The response is not adequate. Please provide text that references the additional data collection and identify the sections in Amendment 11 that describe the activities proposed for the investigation of the uncaptured portion of the Delta Seep.

- **Previous August 14, 2015 Comment LRWQCB 11: Page ES-7 Recommendations.** LRWQCB requested clarification concerning if the program will continue collecting flow

measurement at USGS stations, if these measurements are compared against USGS data, and what information has been used for comparison. **ARC Response March 14, 2016:** ARC's response states that ARC will continue the program through the RI/FS and that the scope of measurement collection after the completion of the RI/FS will be determined at a later date. Flow measurements were compared; however, not included in this evaluation as it was viewed as outside of the scope. **EPA Comment:** This response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 12: Page 3, Section 2.0, last paragraph, 1st sentence.** LRWQCB requested clarification as to the reason NDEP water quality data from Bryant Creek were not included in this evaluation. **ARC Response March 14, 2016:** ARC's response states that a summary of NDEP investigation is included in Section 3.0 and that the data were not included in this evaluation since the LRWQCB data were considered adequate for this report. **EPA Comment:** EPA directs ARC to summarize the NDEP data and describe it with respect to the LRWQCB data. Please provide text to summarize the data, and answer questions related to the similarity and differences between the data sets.

- **Previous August 14, 2015 Comment LRWQCB 13: Page 3, Section 2.1 2nd paragraph, 1st sentence.** LRWQCB recommended that ARC replace "the identified seeps" with "selected seeps." **ARC Response March 14, 2016:** ARC has revised the text. **EPA Comment:** ARC's response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 14: Page 3, Section 2.1 2nd paragraph, 3rd sentence.** LRWQCB recommended that ARC add "selected" in front of "seeps." **ARC Response March 14, 2016:** ARC has revised the text. **EPA Comment:** ARC's response is adequate.
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- **Previous August 14, 2015 Comment LRWQCB 15: Page 4, Section 2.1 3rd paragraph, 2nd to last sentence.** LRWQCB stated that acidic drainage and direct precipitation are also stored in the ponds. **ARC Response March 14, 2016:** ARC has revised the text. **EPA Comment:** ARC's response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 16: Page 5, 1st paragraph, 1st sentence.** LRWQCB recommended stating the sentence as "RI/FS sampling used a different naming convention than that established for historical surface water monitoring by the LRWQCB and USGS." **EPA Comment:** ARC's response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 17: Page 5, Section 2.2, 2nd paragraph, last sentence.** LRWQCB requested clarification on why total metals are not included in this evaluation. **ARC Response March 14, 2016:** ARC has revised the text. ARC's response states that in evaluating overall trends, dissolved metals are less likely to be affected by specific sampling conditions at the time of sampling. In addition, total metal data summaries have been included (Table 7-2B and 7-4B) to provide additional information. The new sections relevant to risk assessment have discussed total metal concentrations. **EPA Comment:** This response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 18: Page 7, 2nd paragraph, 3rd sentence.** LRWQCB recommended providing additional summary of the beaver dam/pond complex and suggested illustrating the extent of the complex in Figure 2.2. **ARC Response March 14, 2016:**

ARC has revised the text, included a narrative description of the complex in Section 4.1.2.4, and shows the location in Figure 4-4. **EPA Comment:** This response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 19: Page 8, Section 2.2, 2nd paragraph/bulleted list.** LRWQCB requested clarification regarding the reasoning that the Water Quality Control Plan for the Lahontan Basin was not used as a screening criteria for aquatic resource protection. **ARC Response March 14, 2016:** ARC has revised the text. ARC's response stated that the document outlines conservative screening criteria to be uniformly used to assess data trends in all stream reaches. The analysis mentioned in the comment will be done as part of the FS. **EPA Comment:** This response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 20: Page 9, Section 2.5.** LRWQCB requested that the start date be revised from 1993 to 1994 in the 1st paragraph, 1st sentence and that historical data be changed to LRWQCB. In addition, LRWQCB requests that ARC note that the LRWQCB data were also collected according to approved work plans, QAPPs/SAPs, and in accordance with chain-of-custody procedures. **ARC Response March 14, 2016:** The requested revisions were made. **EPA Comment:** ARC's response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 21: Page 11, Section 3.0.** LRWQCB requested that ARC list the early response actions, regulatory actions, and other events affecting water quality. In addition, LWQCB requested that ARC provide the reason for the CUD and PUD (not pollution abatement). In the 4th bulleted paragraph, LRWQCB recommended revising the description and timeframe of the Water Board's seasonal acid drainage treatment system. In the 6th paragraph, the timeframe should be consistent with the period given on page 13. **ARC Response March 14, 2016:** ARC has revised the text in this section (now Section 6.0). **EPA Comment:** The response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 22: Page 12, Section 3.1.** LRWQCB requested that the timeframe be consistent with the periods outlined in LRWQCB Comment 5. **ARC Response March 14, 2016:** ARC refers to its response to comment 5 which provides explanation for not changing the time periods. **EPA Comment:** The response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 23: Page 13, Section 3.1, second bulleted section on page.** LRWQCB requested clarification concerning the inconsistencies of evaluation periods of Aspen Creek. Three periods are listed in this bullet, but on page 16 only two periods are mentioned. **ARC Response March 14, 2016:** ARC revised the text on page 16 to match the 2nd bullet on page 13. **EPA Comment:** This response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 24: Page 17, 1st paragraph, 1st sentence.** LRWQCB requested ARC note that pH data are available for the time period 2001-2004 for Leviathan mine site. **ARC Response March 14, 2016:** ARC revised the text. **EPA Comment:** This response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 25: Page 17, Section 3.1.2, 2nd paragraph, 2nd sentence.** LRWQCB requested clarification regarding the lack of further discussion of arsenic, iron, and nickel after ARC stated in the text and a further discussion was forthcoming. **ARC Response March 14, 2016:** ARC revised the text in Section 6.1.2 to address the comment. **EPA Comment:** This response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 26: Page 18, Section 3.1.3.** LRWQCB requested that this section include discussion of acid drainage source flows in addition to creek flows. **ARC Response March 14, 2016:** ARC revised the text to include seasonal variation of iron and arsenic at the sources (Adit, PUD, CUD, and Aspen Seep) along with new figures. **EPA Comment:** This response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 27: Page 25, Section 4.3, 5th sentence.** LRWQCB requested clarification concerning the statement that dissolved metal concentration and total metal concentration were relatively similar for the majority of metals. LRWQCB noted that from Table 4.1, results indicate that there are considerable variances between these two concentrations. **ARC Response March 14, 2016:** ARC's response still maintains that the majority of metals are relatively similar; however, further details regarding the metals that were the exception will be added to the discussion. **EPA Comment:** EPA looks forward to this information in the December 2017 Draft RI. This response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 28: Page 30, Section 4.3.3, 1st paragraph and Table 4-8.** LRWQCB requested clarification as to if the discrepancy in detection limits of 2012 and 2013 are anticipated to affect the comparison of historical and RI/FS data. **ARC Response March 14, 2016:** ARC's response states that the comparisons would not be affected. ARC states that there are multiple different detection limits for the LRWQCB due to the extended monitoring period. **EPA Comment:** This response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 29: Page 31, Section 4.3.3.1.** LRWQCB requested clarification concerning if some of the samples collected under the paragraphs starting "Arsenic", "Iron", and "Nickel" were collected during a sampling event under which both the ARC and LRWQCB systems were discharging into the creek. The LRWQCB treatment is not mentioned. LRWCQB recommended referencing event numbers as outlined in LRWQCB Comment 4. **ARC Response March 14, 2016:** ARC's response is similar to the RTC for LRWQCB Comment 4. **EPA Comment:** Please clarify in the text whether the LRWQCB was discharging during sampling events for arsenic, iron, and nickel.

- **Previous August 14, 2015 Comment LRWQCB 30: Page 32, Section 4.3.3.1.** LRWQCB requested ARC add the missing parenthesis from the first sentence of the bulleted paragraph starting with "Thallium." **ARC Response March 14, 2016:** The requested edit was made. **EPA Comment:** ARC's response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 31: Page 39, Section 5.0, 1st paragraph, 4th sentence.** LRWQCB recommended deleting the phrase "a more robust set of" from the sentence. **ARC Response March 14, 2016:** The requested edit was made. **EPA Comment:** ARC's response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 32: Page 40, Section 5.2.2, 1st paragraph, 2nd sentence.** LRWQCB recommended referencing the contribution of treated water to Leviathan Creek as an additional reason variable concentrations over time are observed at Station 15. **ARC Response March 14, 2016:** The text was edited accordingly. **EPA Comment:** ARC's response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 33: Page 40-41, Section 5.2.3.** LRWQCB requested clarification on the following topics:
    - Why the evaluation of metal concentrations under varied hydrologic conditions was limited to Station 15. Adding other locations to the evaluation would allow for examination of the potential influence of the beaver dam/pond complex.
    - 2010 and 2011 are considered wet years in the comparative analysis of dry vs. wet years; however, no data from 2011 were included in the analyses. Is one year's worth of data (2010) adequate to compare to four dry years.
    - It is uncertain which data were used in the analysis to generate Figures 5-11 and 5-12.
    - There appeared to be noticeable differences between wet and dry years in the whisker plots for aluminum, arsenic, copper, and nickel in Figures 5-11 and 5-12. What conclusions may be drawn regarding water chemistry and how it relates to wet and dry years?

  ARC Response March 14, 2016: ARC's response included the following:
    - The evaluation was limited to Station 15 since the location has a metals concentration sufficiently high and varied to conduct the evaluation. Stations 1, 23, and 25 are much lower and less variable. In addition, the dataset collected is insufficient to address potential influence of the beaver ponds; however, more data are being collected that would make this evaluation possible. **EPA Comment:** This response is adequate.
    - There is no surface water quality data available for 2011 as none were collected. The comparative dataset is believed to be sufficient and wet years are also inclusive of 1999, 2004, 2005, 2006, and 2010. **EPA Comment:** Please perform a power analysis to address this concern.
    - Table 8-1 has been included that shows the data used for the figures. **EPA Comment:** This response is adequate.
    - The bulk of the data (between the 25^{th} and 75^{th} percentile) for aluminum, arsenic, copper, and nickel do not indicate a statistically significant difference between the wet and dry year populations (25^{th}-75^{th} percentile). **EPA Comment:** EPA recognizes that there are outliers within the data for the four metals and that these should be excluded for statistical analyses, however, the analyzed data should be inclusive of more than just the 25^{th} to 75^{th} percentile. Please clarify what data have been excluded for the analysis that states there is no statistically significant difference. Please add text to explain and support the process for how the outliers were identified.

- **Previous August 14, 2015 Comment LRWQCB 34: Table 5-1.** LRWQCB requested that ARC correct an apparent typo in the third column in which a "3" is present in results where a greater than, equal to, or less than symbol is needed. **ARC Response March 14, 2016:** ARC edited the table as appropriate. **EPA Comment:** ARC's response is adequate.

- **Previous August 14, 2015 Comment LRWQCB 35: Figures 3-4 and 3-5.** LRWQCB requested the dates for the data be displayed. **ARC Response March 14, 2016:** ARC has not included the requested dates. **EPA Comment:** The ARC response is incomplete. Please include requested dates and confirm that Figures 3-4 and 3-5 are currently Figures 6-4 and 6-5.

- **Previous August 14, 2015 Comment LRWQCB 36: Figures 3-19 and 3-20.** LRWQCB requested the dates for the data be displayed. **ARC Response March 14,**

2016: ARC has not included the requested dates. **EPA Comment:** The ARC response is incomplete. Please include requested dates and confirm the new Figure numbers and include dates for Figures 6-19 to 6-23.

- **Previous August 14, 2015 Comment LRWQCB 37: Appendix 4-C.** LRWQCB requested ARC title the four sampling events with the event number described in LRWQCB Comment 5. LRWQCB also requests clarification concerning the apparent absence of data for Station 30 during 2012. **ARC Response March 14, 2016:** ARC's response states that the event sampling numbering will be added to the titles and that ARC did not have the land owner permission to sample at Station SW-30 until the fourth sampling event. **EPA Comment:** EPA finds that the ARC response is adequate. EPA requests clarification that Appendix 4-C has been renamed Appendix 7-C1.